

LOWER LOS ANGELES RIVER REVITALIZATION PLAN (LLARRP) WORKING GROUP MEETING #17

Thursday, September 7, 2017 ♦ 6:00 pm – 9:00 pm
First District Los Angeles County Board of Supervisors Southeast Los Angeles Field Office
2677 Zoe Avenue, 2nd Floor, Huntington Park, CA 90255

A P P E N D I X T O S U M M A R Y R E P O R T

ATTACHMENT A: AGENDA

**LOWER LOS ANGELES RIVER REVITALIZATION PLAN (LLARRP)
WORKING GROUP PROJECT MEETING No. 17**

Thursday, September 7, 2017
6:00 pm - 9:00 pm

First District Los Angeles County Board of Supervisors, Southeast Los Angeles Field Office
2677 Zoe Avenue, 2nd Floor, Huntington Park, CA 90255

Meeting Objectives:

1. Review outcomes of Working Group Meeting #16
2. Present the Hydrology 101 information
3. Finalize the Equity Goals and Objectives
4. Confirm and Discuss the Signature Projects
5. Review the remaining project schedule

A G E N D A

5:30 pm		<i>Sign-In, Refreshments and Networking!</i>
6:00 pm	I.	Welcome, Introductions and Agenda Overview Mark Stanley, Executive Officer, RMC Andy Pendoley, Meeting Facilitator, MIG
6:10 pm	II.	Presentation: Hydrology 101
6:30 pm	III.	Discussion: Final Equity Goals and Objectives
7:00 pm	IV.	Discussion: Confirmation of Signature Projects
8:00 pm	V.	Presentation: Remaining Project Schedule
8:20 pm	VI.	Summary and Next Steps
8:25 pm	VII.	Announcements and Public Comment
8:30 pm	VIII.	Meeting Close...and Networking!

ATTACHMENT B: SIGN IN SHEETS

AB 530 LOWER LOS ANGELES RIVER REVITALIZATION PLAN
WORKING GROUP LIST

	Organization	Member	Appointee's Email	Alternate(s)	Alternate's Email
1	Businesses – Chamber of Commerce	Efrén Martinez	emz24@yahoo.com		
2	California Assembly District 63	Raul Alvarez	raul.alvarez@asm.ca.gov ✓	Jeremy Roseman	jeremyroseman@asm.ca.gov
3	City of Bell	Ali Saleh	asaleh@cityofbell.org	Nestor Enrique Valencia	nvalencia@cityofbell.org
4	City of Bell Gardens	Pedro Aceituno	pacituno@bellgardens.org	Jose Mendoza	jmendoza90201@yahoo.com
5	City of Cudahy	Baru Sanchez	bsanche4@gmail.com	Aaron Hernandez-Torres	ahernandez@cityofcudahyca.gov
6	City of Downey	Sean Ashton	sashton@downeyca.org <i>OK</i>		
7	City of Huntington Park	Graciela Ortiz	gortiz@hpcga.gov		
8	City of Long Beach	Al Austin	district8@longbeach.gov	Jonathan Kraus <i>OK</i>	jonathan.kraus@longbeach.gov
				Larry Rich	larry.rich@longbeach.gov
				Mike Affeldt* <i>MA</i>	michael.affeldt@lacity.org
				Evelyn Cortez-Davis	evelyn.cortez-davis@ladwp.com
				Serge Haddad	serge.haddad@ladwp.com
				Rafael Villegas	rafael.villegas@ladwp.com
9	City of Los Angeles	Carol Armstrong	carol.armstrong@lacity.org	Bob Sun	bob.sun@ladwp.com
10	City of Lynwood	Aide Castro	castro.aide@gmail.com	Maria T. Santillan-Beas	mariasantillanbeas@yahoo.com
11	City of Maywood	Eddie De La Riva ✓	eddie.delariva@cityofmaywood.org		
12	City of Paramount	Christopher S. Cash <i>OK</i>	ccash@paramountcity.com	Wendy Macias	wmacias@paramountcity.com
13	City of South Gate	Jorge Morales	jorgemoralesjr@gmail.com	Arturo Cervantes	acervantes@sogate.org
				Gladis Deras ✓	gderas@sogate.org

* Primary alternate

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WORKING GROUP LIST

	Organization	Member	Appointee's Email	Alternate(s)	Alternate's Email
14	City of Vernon	Alex Kung	akung@ci.vernon.ca.us	Derek Wieske Brandon Araujo <i>B.A.</i>	dwieske@ci.vernon.ca.us baraujo@ci.vernon.ca.us
15	Council of Watershed Health	Wendy Ramallo	wendy@watershedhealth.org	Jessie Johnson Yareli Sanchez	jessie@watershedhealth.org yareli@watershedhealth.org
16	East Yard Communities for Envir. Justice	Mark Lopez	markl.eycej@gmail.com	Taylor Thomas Jessica Prieto <i>X</i>	taylor.eycej@gmail.com jessicap.eycej@gmail.com
17	Friends of the LA River (FoLAR)	William P. Bowling	wpb@folar.org	Marissa Christiansen Stephen Mejia <i>SM</i>	marissa@folar.org smejia@folar.org
18	From Lot to Spot (FLTS)	Viviana Franco	viviana@fromlotospot.org	Enrique Huerta <i>EH</i>	enrique@fromlotospot.org
19	Gateway Cities COG	Robert Garcia	Diana.Tang@longbeach.gov	Arturo Sanchez	arturo.sanchez@longbeach.gov
20	Gateway Water Management Authority	Christopher S. Cash <i>cc</i>	ccash@paramountcity.com	Wendy Macias	wmacias@paramountcity.com
21	Heal the Bay	James Alamillo	jalamillo@healthebay.org		
22	Long Beach Conservation Corps	Dan Knapp	dknapp@cclb-corps.org	Kedrin Hopkins	khopkins@cclb-corps.org
23	Los Angeles Conservation Corps	Dore Burry	dburry@lacorps.org		
24	Los Angeles County Bike Coalition	Monique Lopez <i>ML</i>	monique@la-bike.org	Lyndsey Nolan Elizabeth Alcantar <i>EA</i>	lyndsey@la-bike.org elizabeth@la-bike.org
25	Los Angeles County 1st District	Teresa Villegas	tvillegas@bos.lacounty.gov	Kimberly Ortega <i>KO</i>	kortega@bos.lacounty.gov
26	Los Angeles County 2nd District	Karly Katona	kkatona@bos.lacounty.gov	Lacey Johnson	ljohnson@bos.lacounty.gov
27	Los Angeles County 4th District	Herlinda Chico	hchico@bos.lacounty.gov		

* Primary alternate

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AB 530 LOWER LOS ANGELES RIVER REVITALIZATION PLAN
WORKING GROUP LIST

	Organization	Member	Appointee's Email	Alternate(s)	Alternate's Email
28	Los Angeles Neighborhood Land Trust	Keshia Sexton <i>TAMICA BUTLER</i>	ksexton@lanlt.org	Mark Glasscock	mglasscock@lanlt.org
29	Prevention Institute	Manal Aboelata	manal@preventioninstitute.org	Elva Yañez	elva@preventioninstitute.org
30	Public Counsel	Antonio Hicks	ahicks@publiccounsel.org	Ritu Mahajan	rmahajan@publiccounsel.org
				Dat Phan	dphan@publiccounsel.org
31	Regional Water Quality Control Board	Irma Muñoz	irma.munoz@mujeresdelatierra.org		
32	River LA	Jon Switalski	jon@riverla.org	Cynthia Kurtz	cynthia@riverla.org
33	The Nature Conservancy	Jill Sourial	jill.sourial@tnc.org	Shona Ganguly*	sganguly@tnc.org
				Charlotte A. Pienkos	cpienkos@tnc.org
34	The Trust for Public Land	Tori Kjer	tori.kjer@tpl.org	Robin Mark	robin.mark@tpl.org
35	Trails4All	Jim Meyer	jmeyer14A@aol.com	Beth Gendreau	bkgendreau@ca.rr.com
36	Urban Waters Federal Partnership	Pauline Louie	pauline@watershedhealth.org	Justin Yee	justin_yee@nps.gov
				Diana Varat	dvarat@ucla.edu
37	Water Replenishment District	Willard Murray	sbrown@wrdd.org ; wmurray@wrdd.org		
38	Watershed Conservation Authority	Debbie Enos	denos@wca.ca.gov	Joe Gonzalez	jgonzalez@wca.ca.gov
				Johnathan Perisho	jperisho@wca.ca.gov
39	Watts Reimagined	Frank O'Brien	frank@wattsreimagined.org	Chris Jordan	frank@hwedc.com
	Rivers and Mountains Conservancy	Mark Stanley	mstanley@rmc.ca.gov	Marybeth Vergara	mvergara@rmc.ca.gov

* Primary alternate

AB 530 LOWER LOS ANGELES RIVER REVITALIZATION PLAN
Working Group Meeting No. 16
August 3, 2017
6:00 PM - 9:00 PM

	Name	Organization	Phone	Email
1	Ana Bonilla	Prevention Institute	502-900-1078	ana@preventioninstitute.org
2	Anakuren Monroy	SD - 1st District	305	amonroy@bos.lacounty.gov
3	Eddie De La Cruz	Maywood		
4	Edwin Sucedo		(323) 241-7409	edwinsucedo@yahoo.com
5	Josue Burgos			josue.this.way@gmail.com
6	Debra Gonzalez	Teares 4 All		
7	ERIC NGUYEN	USACE	(213) 452-3288	eric.l.nguyen@USACE.army.mil
8	Miguel Luna	Bakersfield	(818) 568-9139	~
9	Nathaniel Riedy	MIG		nriedy@migcom.com
10	Flor			FVind3t@gmail.com

AB 530 LOWER LOS ANGELES RIVER REVITALIZATION PLAN
Working Group Meeting No. 16
August 3, 2017
6:00 PM - 9:00 PM

	Name	Organization	Phone	Email
11	Edith Perez		323-691-9717	
12	Chris Solek	Corps	213 452-3698	—
13	Oscar Magaña		323-215-9241	
14	Heidi Liu	Public Counsel	714-726-2381	
15	Sueely Suro	Office of Southern Kumdo Law	(562) 256-7921	sueely.suro@smc.ca.gov
16	Anthony Nercessian	LADWP	213-367-8327	anthony.nercessian@ladwp.ca.gov
17	Kim Tachiki-Chin	Rep. Puryan- Allard	323-721-0790	kimberlee.tachiki@ mail.house.gov
18	Sarah Rascon	MRCA	323-221-9944 x109	sarah.rascon@mrca.ca.gov
19	Melissa Bahamonde	Public		
20	Raquel Beltran	PBI	(323) 343-3770	raquel.beltran@ calstatela.edu

ATTACHMENT C: POWERPOINT SLIDES



AB 530 Lower LA River Revitalization Plan

Working Group Meeting #17

September 7, 2017

Agenda

- Welcome, Introductions and Overview
- Partner Update: Huntington Park
- Discussion: Schedule
- Update: Community Engagement
- Discussion: Final Community Economics, Health and Equity Goals and Objectives
- Discussion: Confirmation of Signature Concepts
- Presentation: Hydraulics 101
- Presentation: Rio Hondo Confluence Alternatives
- Summary and Next Steps
- Announcements and Public Comments



LOWER LOS ANGELES RIVER REVITALIZATION PLAN (LLARRP)
WORKING GROUP PROJECT MEETING No. 17
Thursday, September 7, 2017
9:00 am - 10:30 am
First District Los Angeles County Board of Supervisors, Southwest Los Angeles Field Office
2877 Zee Avenue, 2nd Floor, Huntington Park, CA 91225

Meeting Objectives:

1. Review outcomes of Working Group Meeting #10
2. Review the remaining project schedule
3. Present the Hydraulics 101
4. Present the Community Economics, Health and Objectives
5. Confirm and Close the Signature Projects

AGENDA

9:00 am	Sign-In, Refreshments and Networking
9:00 am	I. Welcome, Introductions and Agenda Overview Main Library, Concussion 101 on Rio, Social Security, Meeting Facilities, etc.
9:15 am	II. Partner Update: Huntington Park
9:30 am	III. Discussion: Schedule
9:45 am	IV. Update: Community Engagement
10:00 am	V. Discussion: Final CERE Goals and Objectives
10:20 am	VI. Discussion: Confirmation of Signature Concepts
10:30 am	VII. Presentation: Hydraulics 101
10:45 am	VIII. Presentation: Rio Hondo Confluence Alternatives
11:00 am	IX. Summary and Next Steps
11:15 am	X. Announcements and Public Comments
11:30 am	XI. Meeting Close and Networking

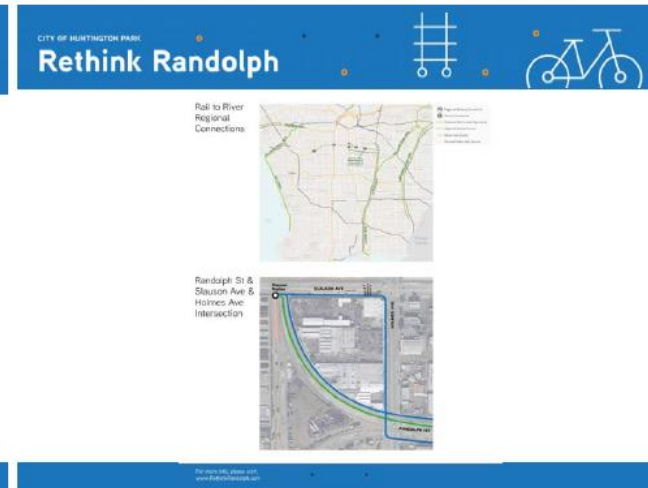
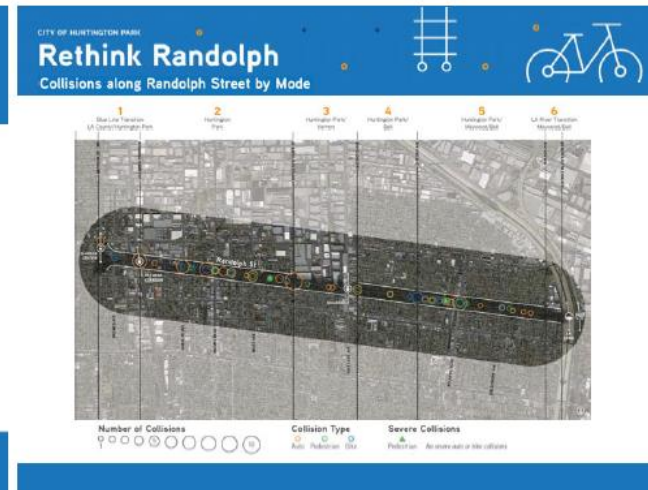
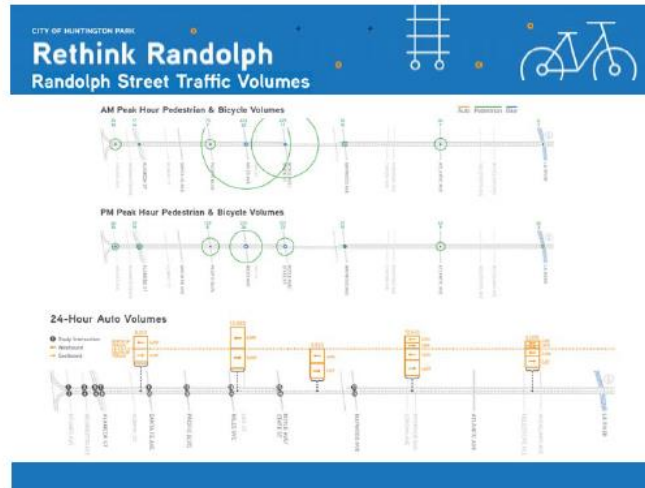
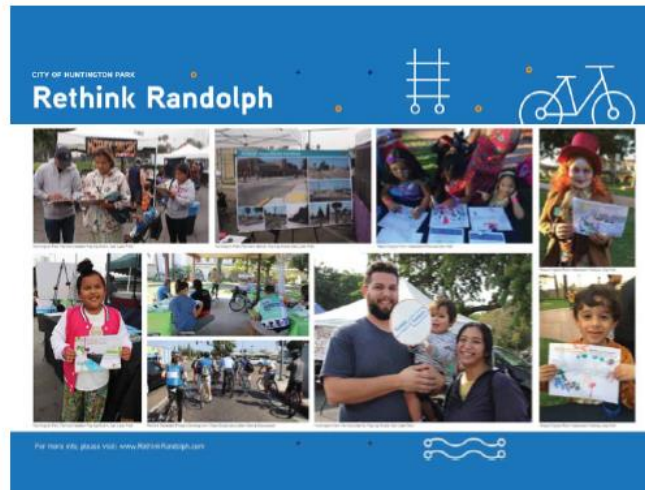
Presentation:
City of Huntington Park

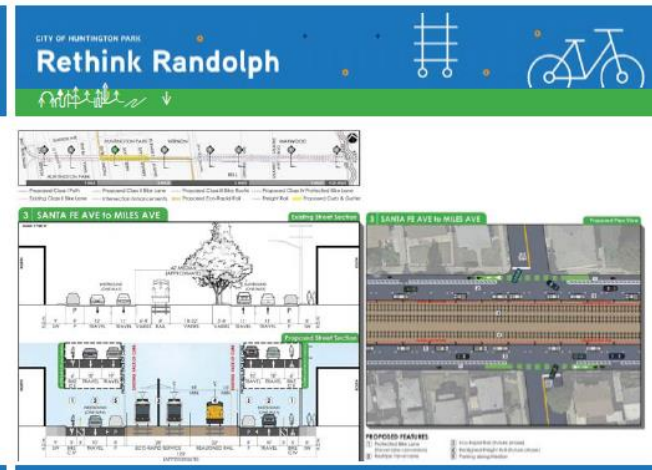
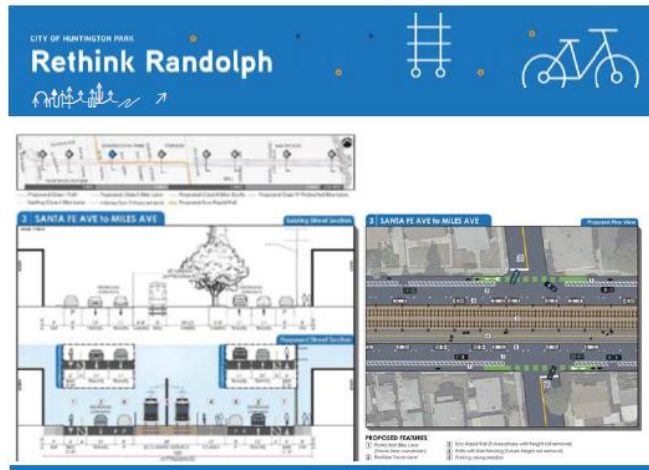
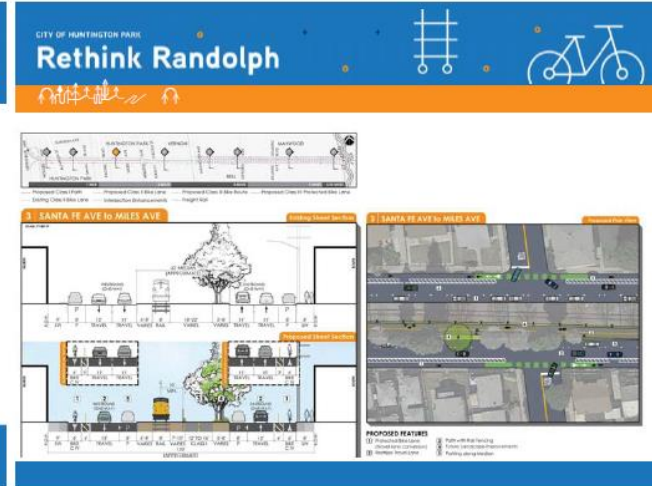
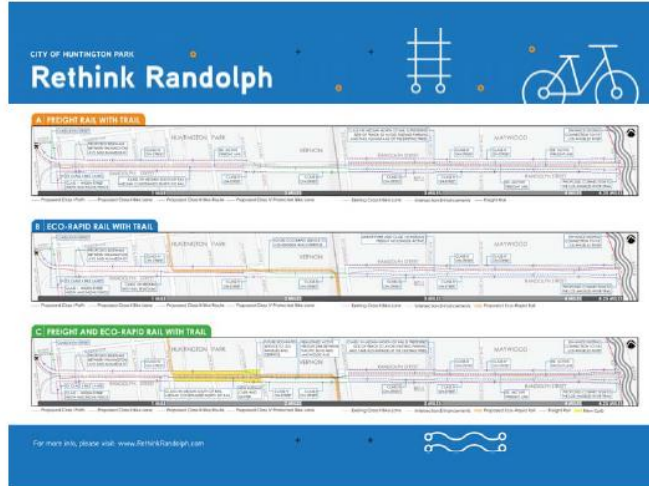


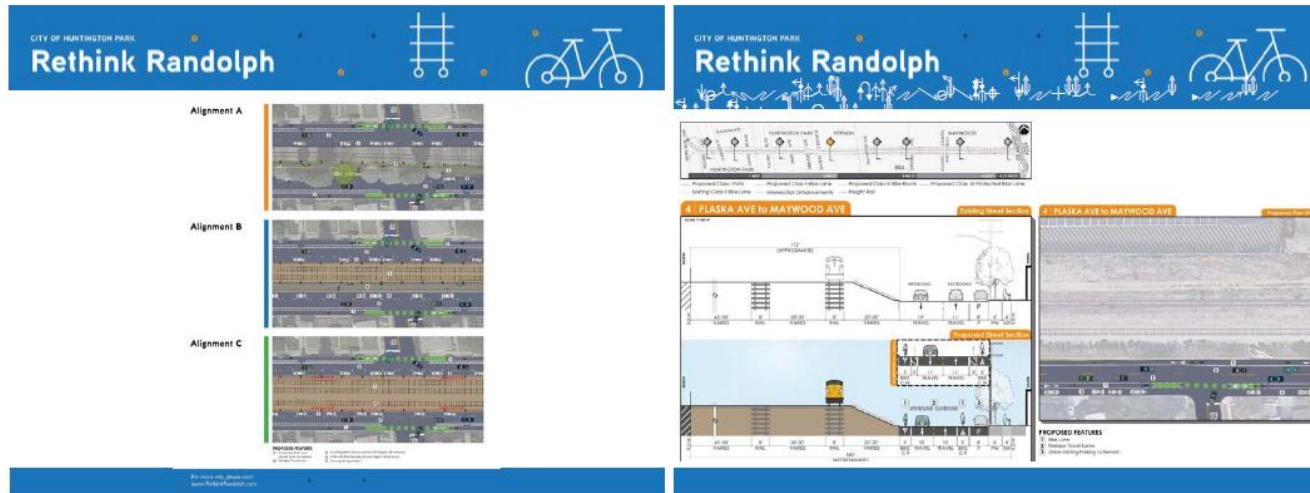
Rethink
Randolph



RANDOLPH CORRIDOR RAIL TO TRAIL FEASIBILITY STUDY
City of Huntington Park
September 7, 2017







Upcoming WG Meeting Presentations

- **October 5**
 - Rio Hondo Concept
 - Alternatives for Signature Concepts
 - Draft Watershed Education Program
- **November 2**
 - Remaining Alternatives for Signature Concepts
 - Draft Signature Concepts
 - Final Watershed Education Program
 - Draft Governance



Upcoming WG Meeting Presentations

- **December 7**
 - Final Governance
 - Draft LLARRP
 - Remaining Draft Signature Concepts
- **January 4**
 - Final Signature Concepts
 - Draft Final LLARRP
- **February 1**
 - Final LLARRP
 - Consensus on Final LLARRP



August 2017 Plan Element Committee
COMMUNITY ENGAGEMENT
August 21, 2017



Community Outreach Phase 1 - Respondents



- 300 Online Mapping Survey
- 30 River Clean Up
- 230 Pop Up Events
- 15 Community Workshops

Community Outreach Phase 1 Input - Opportunities

- Connect the LLAR to other community
- Dominguez Gap Wetland as a template
- Increase park space
- Convert warehouses to green space
- Provide better and consistent maintenance of river, trails, paths, and streets
- Provide better security
- Provide shade
- Create a natural-looking river
- Involve local youth in watershed education projects
- Conduct outreach to the transient population



Community Outreach Phase 1 Input - Issues

- Lack of landscaping and shade
- Access to the River
- Lack of Amenities
- Security
- Safer connections for bicyclists
- Air pollution and odors
- Prevent displacement
- Transient population, homelessness
- Pet amenities
- River channel not designed to account for sea level rise at its outlet in Long Beach and may exacerbate potential coastal and inland flooding
- Doesn't resemble a "river" (too much concrete)



Community Outreach Phase 2

- Schedule: September – October
- Present locations for Signature Projects
- Present amenities and concepts for Signature Projects and Templates
- Receive feedback on Signature Projects and Templates
 - Desired amenities
 - Alternative locations



Community Outreach Events Schedule

- From Lot to Spot:
 - 6 Pop-Up Events in September/October
- LACBC
 - 3 Bike Tours in September/October
- 3 Community Workshops in September/October
- Online Survey Live from September-October



Community Workshops and LACBC Bike Tours

- September 23, 2017: Upper Segment
- September 30, 2017: Middle Segment
- October 7, 2017: Lower Segment



Pop-Up Events – Phase 2

- Upper Segment:
 - Bell Gardens Fiestas Patria, September 16, Bell Gardens Parks
 - Maywood Educational Fair, October 14, Santa Rosa de Lima Catholic Church, Maywood
- Middle Segment:
 - Outreach on the LA River, September 23, Hollydale Park, South Gate
 - Air Quality Community Forum, September 14, Bateman Hall, Lynwood
- Lower Segment:
 - Global Energy 5K Race, September 24, Marina Green Park, Long Beach
 - JetBlue Long Beach Marathon, October 6-8, Long Beach Convention Center



Community Outreach Toolkit

- Toolkit for Phase 2:
 - Input Forms for Signature Projects
 - Input Forms for Signature Templates
 - Input Forms for Signature Policies
 - Online Survey
 - Maps and Factsheets for All Opportunity Areas





Discussion: Final Goals and Objectives



COMMUNITY ECONOMICS, HEALTH AND EQUITY

Helpful Definitions

HEALTH EQUITY "means that every person, regardless of who they are—the color of their skin, their level of education, their gender or sexual identity, whether or not they have a disability, the job that they have, or the neighborhood that they live in—has an equal opportunity to achieve optimal health."-Braveman, Kumanyika, Fielding, et al., 2011

DISPLACEMENT "occurs when any household is forced to move from its residence by conditions which affect that dwelling or its immediate surroundings, and:

- Are beyond the household's reasonable ability to control or prevent;
- Occur despite the household's having met all previously-imposed conditions of occupancy;
- And make continued occupancy by the household impossible, hazardous, or unaffordable."-Grier and Grier, 1978



Helpful Definitions

GENTRIFICATION "is a profit driven race and class remake of urban, working class communities of color that have suffered from a history of disinvestment and abandonment. The process is characterized by declines in the number of low-income people of color workers willing to pay higher rents...Gentrification happens in areas where commercial and residential land is cheap, relative to other areas in the city and region, and where the potential to turn a profit is great.

-Causa Justa :: Just Cause, 2015



Community Economics, Health, and Equity Goal

To ensure that a restored Los Angeles River promotes health, equity, and brings economic and environmental benefits to all residents and local small businesses and does not contribute to gentrification and displacement. Revitalization efforts should build the resilience of residents and small businesses against gentrification and displacement, foster collective community identity and pride and increase economic mobility and opportunities for local populations. Restoration must prioritize and promote inclusivity, health and equity, and climate resilience. In short – Lower Los Angeles River revitalization must be a model of equitable redevelopment, one that ensures that healthy communities investments in these communities benefits existing families and generations to come.



Community Economics, Health, and Equity Objectives

- Prevent local gentrification-induced displacement
- Address homelessness
- Increase equitable community access to multi-use trails, bikeways and assets
- Support and develop local business and workforce
- Promote wellness and physical activity
- Increase community green infrastructure



Prevent Local Gentrification-Induced Displacement

Prevent gentrification and resulting residential and commercial displacement through comprehensive community-driven and informed policies and programs such as, but not limited to affordable housing, rent stabilization, Enhanced infrastructure financing districts (EIFDs), community land trusts, City housing policies, thoughtfully-planned commercial development, and additional LA River multi-use trail and bikeway access points to avoid real estate hot spots. Efforts to prevent gentrification induced displacement should be proactive and comprehensive and range from strengthening individual and community knowledge, educating stakeholders, fostering coalitions, modifying organizational policies, and influencing policy and legislation. Community-driven pilot or demonstration policies with the potential to be scaled up should be prioritized.



Address Homelessness

Address homelessness by preventing residential displacement, supporting regional initiatives such as increasing the affordable housing stock, long-term homelessness interventions and incorporating support services for the homeless into river revitalization projects.



Increase Equitable Community Access to Multi-Use Trails, Bikeways, and Assets

Increase equitable community river access and assets through smart acquisitions of river adjacent properties to address the community and users' needs. These spaces must be safe, accessible by the community and meet the needs of a diverse range of users.



Support and Develop Local Businesses and Workforce

Support existing local businesses and workforce through coordination with organizations, development of park space and housing areas along the Lower LA River and support of locally owned businesses. Environmental remediation, green space development and revitalization efforts should directly engage the community and create job opportunities while providing workforce training and provisions for worker safety.



Promote Wellness and Physical Activity

Promote health, equity, wellness and physical activity in communities along the lower LA River by providing access to safe and interconnected complete streets, parks and open spaces that promote an active lifestyle, and by increasing access to and promoting healthy food.





Increase Community Green Infrastructure

Increase community green infrastructure in communities along the Lower LA River in order to protect and improve air and water quality, increase outdoor activity, improve mental health, and increase social cohesion by creating community gathering spaces.



Discussion: Confirmation of Signature Policies and Templates



The Role of the "Signature Concepts"

- The LLARRP will recommend and prioritize many multi-benefit strategies throughout the corridor
- However, certain multi-benefit strategies need further analysis or coordination before inclusion in the LLARRP
- These "Signature Concepts" can include...
 - Projects
 - Templates
 - Programs/policies



Signature Policy

- Community Stabilization Toolkit
 - Model Inclusionary Zoning Regulations
 - Workforce Development Program Support Plan (LATTG)
 - Model Affordable Housing Requirements
 - Model Community Benefit Agreement



Signature **Template**: Connectivity/Complete Streets and Wayfinding/Welcoming

- Templates for strategies to draw communities to the river and also direct trail users to surrounding retail districts and points of interest (lateral connections): templates for implementing complete streets, including concepts for street ends ("river streets") and community gateways



Signature **Template**: Multi-Use Trail Enhancements

- Improvements to provide basic features and consistent user experience along the north-south trail, including shade, restrooms, lighting, art, and engagingly curated historical, environmental, and cultural experiences



Signature **Template**: Improved Crossings

- Concepts to create safe crossings for all users while also creating sense of place and connections to the river



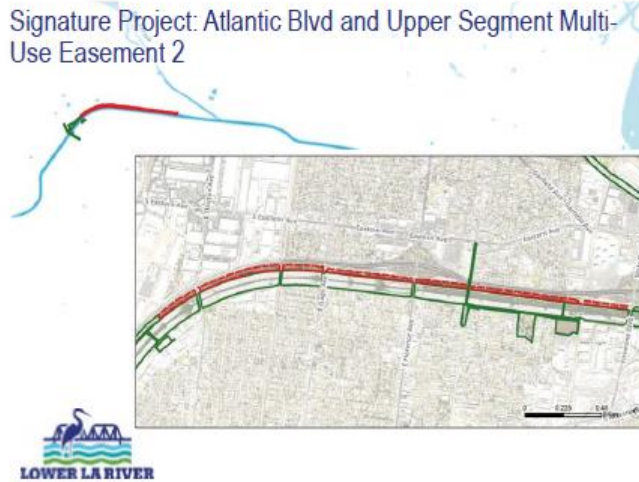
Discussion of Potential Signature Projects



Signature Project: Atlantic Blvd and Upper Segment Multi-Use Easement 1



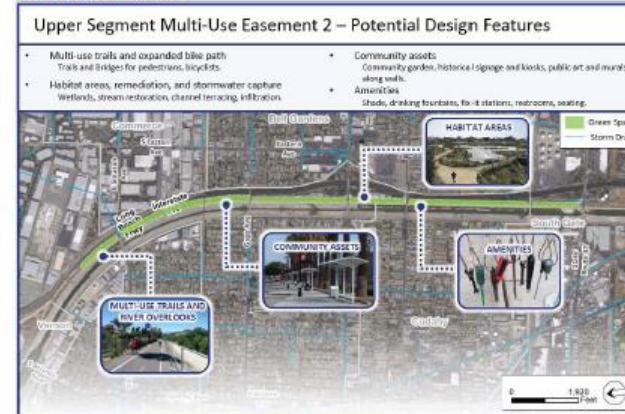
Signature Project: Atlantic Blvd and Upper Segment Multi-Use Easement 2



Signature Project: Atlantic Blvd and Upper Segment Multi-Use Easement 1



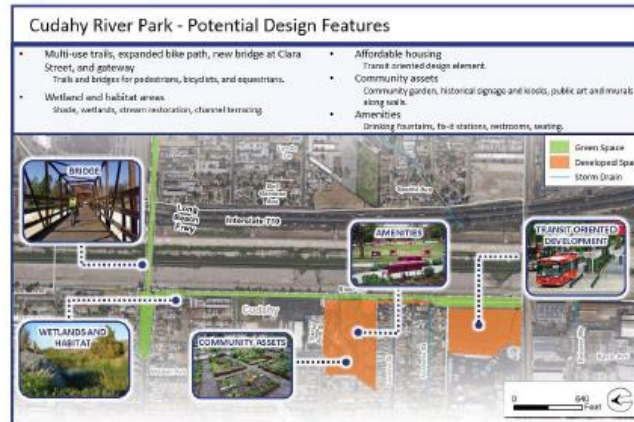
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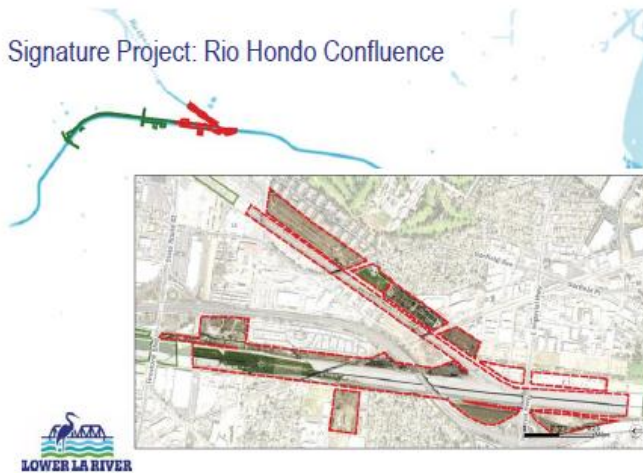
Signature Project: Cudahy River Park Area



Signature Project: Cudahy River Park Area



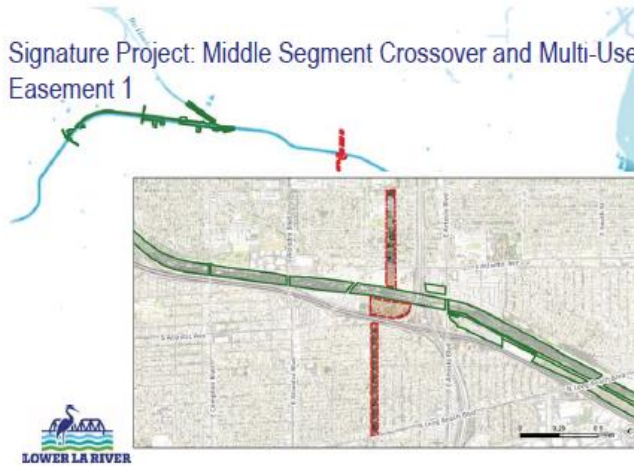
Signature Project: Rio Hondo Confluence



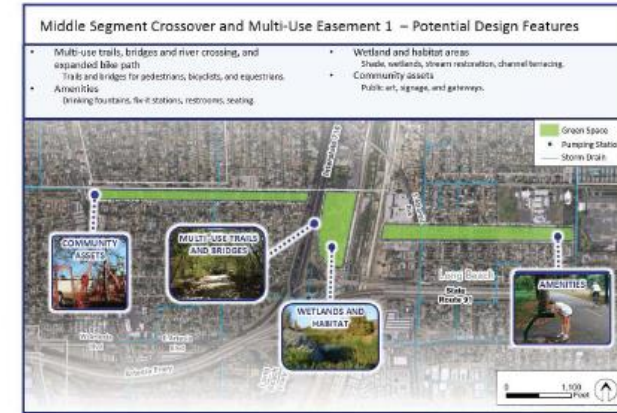
Signature Project: Rio Hondo Confluence



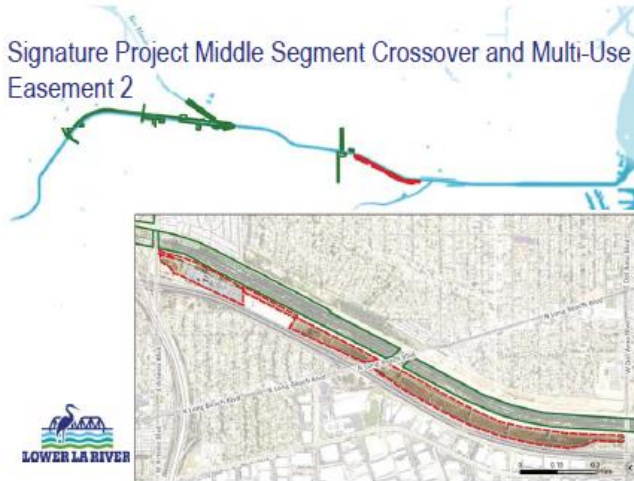
Signature Project: Middle Segment Crossover and Multi-Use Easement 1



Signature Project: Middle Segment Crossover and Multi-Use Easement 1



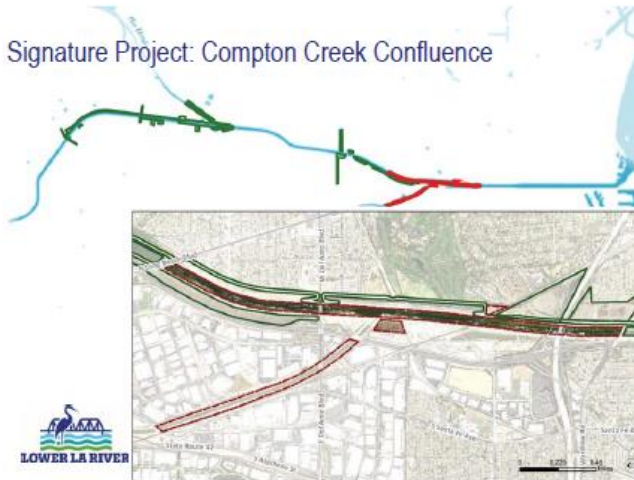
Signature Project Middle Segment Crossover and Multi-Use Easement 2



Signature Project Middle Segment Crossover and Multi-Use Easement 2



Signature Project: Compton Creek Confluence



Signature Project: Compton Creek Confluence

Compton Creek Confluence Area – Potential Design Features

- LA River Modification: Terracing, river widening, and 710 relief drain options.
- Multi-use trails, bridges, and overlooks: Trails and bridges for pedestrians, bicyclists, and equestrians. Potential staging area on east side of river near Dominguez Gap Wetlands.
- Rubber Dam: The rubber dam will be evaluated to create a temporary inundation area for water reuse. The water stored behind the rubber dam will provide a temporary recreation area.



Signature Project: Wrigley Heights River Park



Signature Project: Wrigley Heights River Park

Wrigley Heights River Park – Potential Design Features

- Wetland and habitat areas: Shrub, wetlands, stormwater capture, stream restoration, channel terracing will be examined for use at this location.
- Community assets: Community garden, historical signage and kiosks, public art and murals along walls.
- Active recreation: Recreation center, river amphitheater, water recreation, climbing walls.
- Amenities: Drinking fountains, fix-it stations, restrooms, seating.



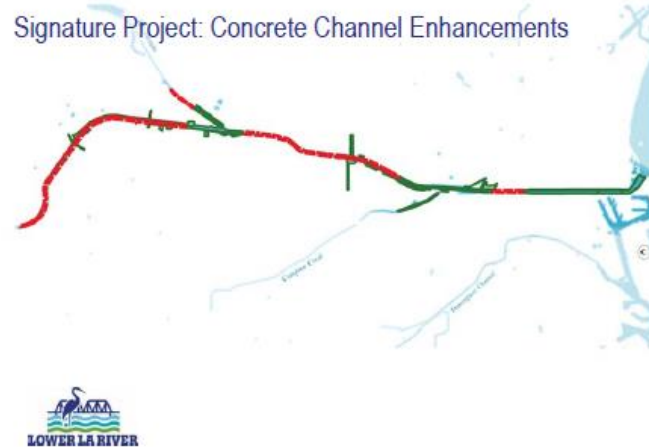
Signature Project: LA River South of Willow



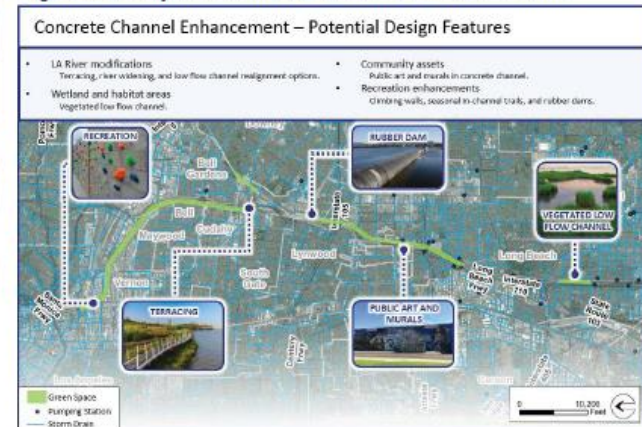
Signature Project: LA River South of Willow

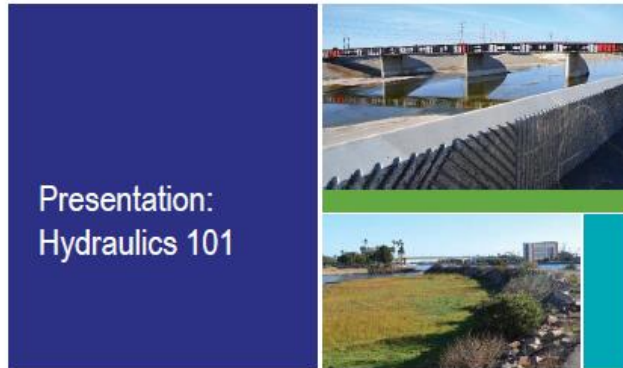


Signature Project: Concrete Channel Enhancements



Signature Project: Concrete Channel Enhancements





Intent of Discussion

- Presentation of general hydraulic concepts affecting the following:
 - Water storage
 - Channel surfaces (concrete vs. natural)
 - In-channel features
- Effects on what we can do within existing—or changed—river boundaries
- How we are applying it to our alternative concepts

What IS Hydraulics??

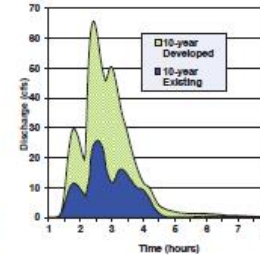
Hydraulics is the “where and how water flows”

- What paths can it take, including overflows, split flows, and confluences?
- What happens in channelization?
- How deep is it?
- How fast does it flow?



Hydraulics is not Hydrology

- **It is not Hydrology!** These are often confused.
- **Hydrology** is the “how much water”
 - Rainwater >> infiltration or runoff >> eventually joins larger bodies of water such as rivers or oceans or groundwater
 - Expressed as a volume rate (ft³/sec)
 - Often referred to as “Q” or “discharge”



Hydraulic Concepts

- The following are some of the concepts and terms used by hydraulic engineers. We will not be discussing most of these in depth

- Conveyance capacity
- Slope
- Cross-sectional area
- Velocity (ft/sec)
- Steady vs. unsteady flow
- Contractions and expansions
- Supercritical and subcritical flow
- Turbulence
- Friction – depending on surface characteristics



Hydraulics During a Storm Event

Los Angeles River, February 1992

- Flows can exceed 30 ft/sec = 20 mph
- Notice the cross waves in the upcoming video clip.
- Video clips
 - Hazeltine Blvd.
 - Whittier Blvd.
 - Santa Fe Railroad Bridge





Storage

Hydrology Meets Hydraulics

- Diversions and Dams
 - Flood storage
 - Water supply
- Floodplain attenuation from overflows and breakouts
- Need to capture the peak when considering flood water storage



Storage (cont.)

- Example of storage requirements for restoration and velocity reduction



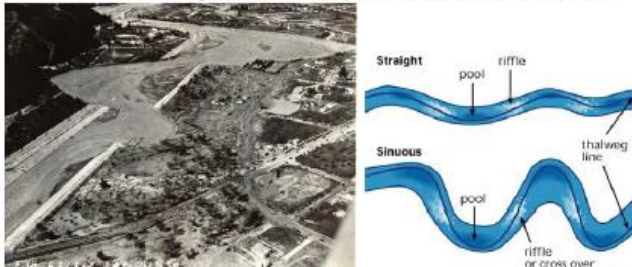
Acres required to store the portion of the hydrograph peak needed to maintain velocities of 12 feet per second or less, with no other channel or watershed changes

Storage (cont.)



Relationship Between Channel Slope and Length

- Natural streams and rivers normally have meandering forces that create sinuosity...with associated pools, riffles, sandbars, and beaches.
- Channelization straightens the river system, so now the slope has to increase, causing additional velocity and associated erosional forces



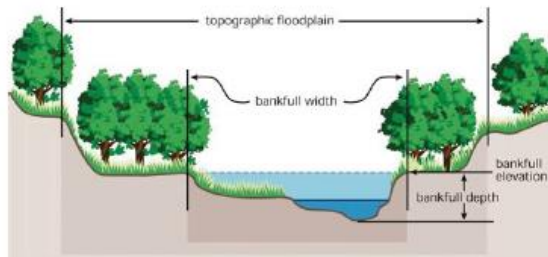
Channel Transitions: Contractions and Expansions

- Requirements for smooth transitions range from 4:1 to 10:1 depending on the type of flow.
- Important for those areas where we *can* widen, but need to consider the transitions into and out of the wider portion



Roughness/Friction

- Friction is a driving force in river hydraulics
- Manning's "n"-value approximates friction losses and is incorporated into the widely-used USACE river analysis model, HEC-RAS
- Manning's "n" ranges
 - Concrete: 0.015 – 0.020
 - Brush: 0.070 – 0.160
 - Channels not maintained: 0.120 – 0.140



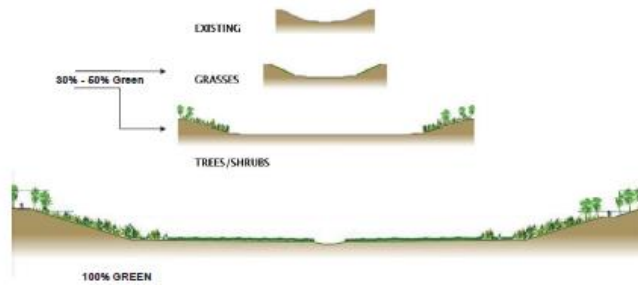
Friction

Friction comes in various forms:

Any channel roughness impacts channel capacity



Vegetation Effects



Vegetation Effects Upstream of Rio Hondo

- Existing channel, n-value = 0.016, width = 338 feet



- 50% vegetated banks with n-value = 0.070, width = 414 feet



Vegetation Effects (cont.)

- Existing channel, n-value = 0.016, width = 338 feet

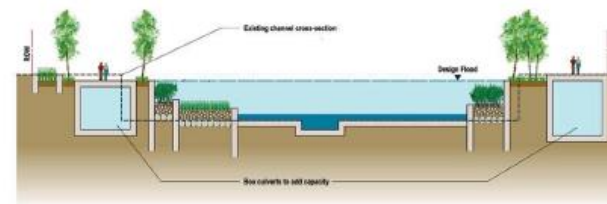


- 100% vegetated channel, n-value = 0.070, width = 1,303 feet

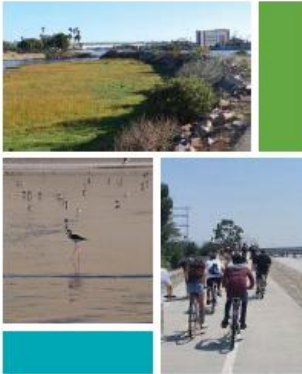



Regaining Conveyance Capacity

- Widening, deepening, raising channels
 - Adding culverts or even "lidding" the channel offers a method that avoids (1) further isolation of the channel access, and (2) additional acquisition of ROW. But: \$\$
- Water storage within the watershed



Rio Hondo Confluence Alternatives

Rio Hondo Confluence Fact Sheet



- Public Space with active and passive recreational areas, access opportunities, and gateways
- Habitat Restoration Opportunity
- Water Resources Opportunities through stormwater capture, green infrastructure, and water use
- Community centers and historical education
- Local Community stabilization opportunities

Key Project Features




Key Project Features – Community Center



Key Project Features – Outdoor Amphitheater



Key Project Features –Wetland



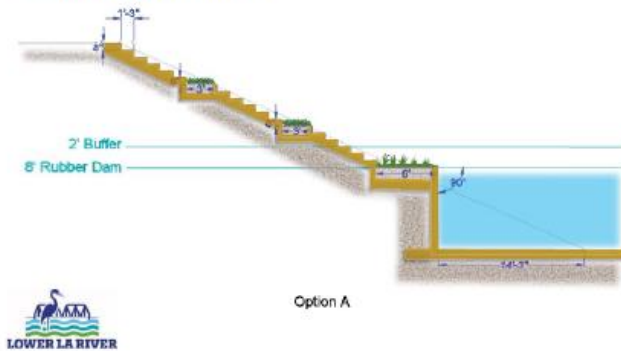
Key Project Features – Rubber Dam and Recreational Area



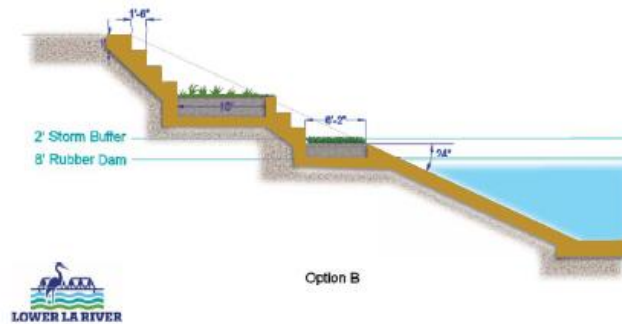
Levee and Terracing Options



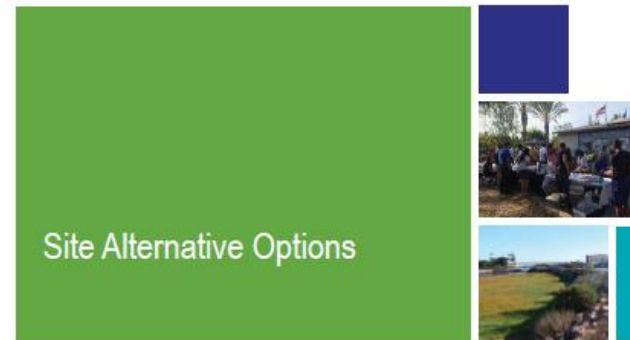
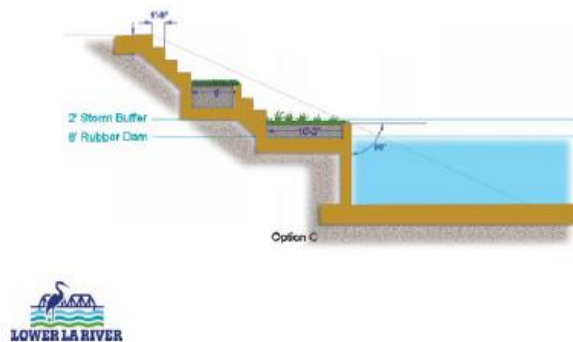
Lower LA River Terracing,
CONFIGURATION A



Lower LA River Terracing,
CONFIGURATION B



Lower LA River Terracing,
CONFIGURATION C



Option 1 Overview



- Natural Habitat wetland areas
- Outdoor Amphitheater and Community Center
- Rubber Dam storage area for water supply and recreational use
- Stormwater treatment unit for irrigation use
- Terraced Levees and low water crossings

Option 2 Overview



- Expanded channel width at the confluence with terraced levees
- Outdoor amphitheater, community center, and food vendors
- Rubber Dam storage area for water supply and recreational use
- Stormwater treatment unit for irrigation use
- Terraced Levees and low water crossings
- Multi-use bridge over 710 and LA River for Ped/Bike/Equestrians to connect communities

LA River at Rio Hondo: OPTION 1



LA River at Rio Hondo: OPTION 2



Option 3 Overview



- Soft-bottom channel width relief drain (subsurface or parallel flood tunnel) and terraced levees
- Outdoor amphitheater and community center
- Rubber Dam storage area option for water supply and recreational use
- Stormwater treatment unit for irrigation use
- Multi-use bridge over 710 and LA River for Ped/Bike/Equestrians to connect communities
- Bridge Park option over the LA River

Opportunity: LA River at Rio Hondo, OPTION 3



LA River at Rio Hondo, OPTION 3B (Subsurface Culvert)

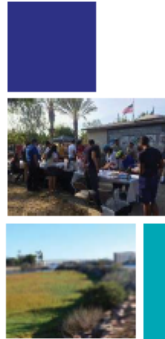


Next Steps



- Hydraulic Model Analyses
- Evaluate Options/Alternatives
- Develop high-level/preliminary cost estimates
- Discuss Options and Select Alternative for CONCEPT DEVELOPMENT

Summary and Next Steps



Upcoming WG Meeting Presentations

- **October 5**
 - Rio Hondo Concept
 - Alternatives for Signature Concepts
 - Draft Watershed Education Program
- **November 2**
 - Remaining Alternatives for Signature Concepts
 - Draft Signature Concepts
 - Final Watershed Education Program
 - Draft Governance



Upcoming WG Meeting Presentations

- **December 7**
 - Final Governance
 - Draft LLARRP
 - Remaining Draft Signature Concepts
- **January 4**
 - Final Signature Concepts
 - Draft Final LLARRP
- **February 1**
 - Final LLARRP
 - Consensus on Final LLARRP



Meeting Schedule

- First Thursday of each month
- 6:00 p.m. to 9:00 p.m.
- Through February 2018
- Next meetings:
 - Thursday, October 5, 2017, Downey
 - Thursday, November 2, 2017, ???
 - Thursday, December 7, 2017, ???





